

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0300291	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/GB2004/003755	International filing date (<i>day/month/year</i>) 03.09.2004	Priority date (<i>day/month/year</i>) 05.09.2003	
International Patent Classification (IPC) or national classification and IPC INV. G01N15/02 G01N15/14 G01R29/24 G01N15/10			
Applicant SMITHS GROUP PLC et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 11.02.2005		Date of completion of this report 15.05.2006	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Bravin, M Telephone No. +49 89 2399-	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/003755

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-6 as originally filed

Claims, Numbers

1-12 as originally filed

Drawings, Sheets

1/7-7/7 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/003755

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-12
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.

Reference is made to the following documents:

- D1: WEBER A P ET AL: "Simultaneous in situ measurement of size, charge and velocity of single aerosol particles" JOURNAL OF AEROSOL SCIENCE, vol. 31, no. Suppl.1, September 2000 (2000-09), pages S1015-S1016, XP002302037
D2: FR-A-2 240 822 (IBM) 14 March 1975 (1975-03-14)
D3: US-A-5 214 386 (ROSSNER MICHAEL ET AL) 25 May 1993 (1993-05-25)

2.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 10 and 12 is not new in the sense of Article 33(2) PCT.

2.1

Claims 1 and 10:

Document D1 discloses an apparatus for characterizing particles, including first means for determining the electrical charge on the particles (see p. S1016, lines 6-10, D1) and second means for determining a second characteristic (size) of the particles (see p. S1016, lines 11-15, D1), the apparatus arranged to provide an indication of the nature of the particles according to the charge and the second characteristic (see p. S1016, lines 11-17 and Fig. 1, D1).

The subject matter of claim 1 is thus known from D1 (Art. 33(2) PCT).

The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding independent claim 10, which therefore is also known from D1 (Art. 33(2) PCT).

2.2

Claim 12:

Document D2 discloses an apparatus for measuring the charge on a particle (see p. 2, lines 4-7 and Figs. 1-3, D2), the apparatus including:

- a tube (see "Film mince", Fig. 2, and Fig. 3, D2) along which the particle is arranged to flow;

- first and second outer electrodes (3c, Fig. 2, D2) towards opposite ends of the tube;

- third and fourth electrodes (3b, Fig. 2, D2) adjacent the first and second electrodes respectively;

- a fifth electrode (3a, Fig. 2, D2) between the third and fourth electrodes;

- a connection connecting the first and second electrodes to ground (see Fig. 1, D2),

- a connection connecting the third and fourth electrodes with one another and to measuring means (see Fig. 1, D2);

- a connection connecting the fifth electrode to the measuring means (see Fig. 1, D2);

the measuring means arranged to subtract the signals on the third and fourth electrodes from the fifth electrode to derive a signal indicative of the charge on the particle (see inputs of operational amplifier 10, Fig. 1, D2).

The subject matter of claim 12 is thus known from D2 (Art. 33(2) PCT).

3.

Dependent claims 2-9 and 11 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty (Art. 33(2) PCT), see documents D1-D3 and the corresponding passages cited in the search report.